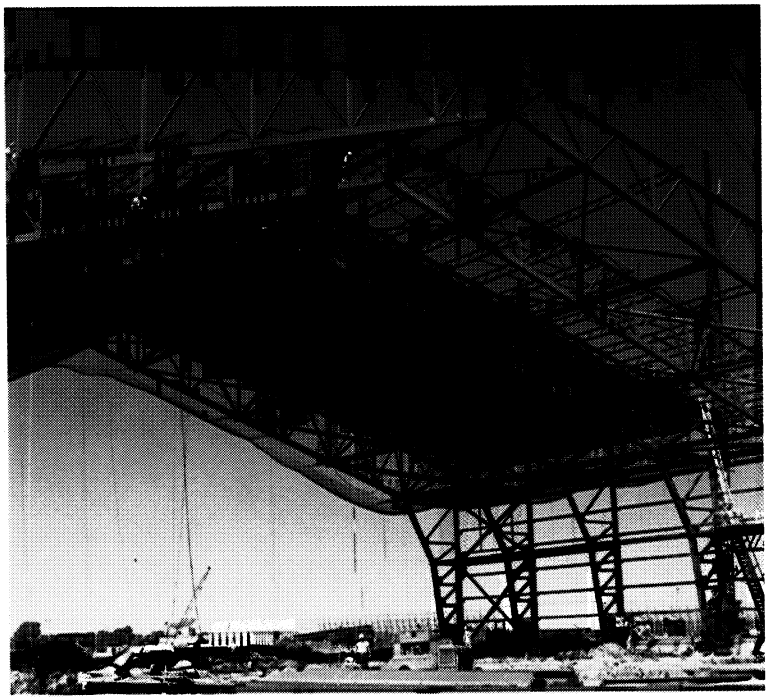

Piping Analysis

Burns & McDonnell, Kansas City, Missouri provides architectural and engineering services in planning, design and construction of a wide range of projects all over the world. In its design analysis work, the company regularly uses computer programs supplied by NASA's Computer Software Management and Information Center (COSMIC).

Above, an engineer is studying a model of the steam and water lines to be incorporated in the design of a power plant. In computer testing the piping design, Burns & McDonnell uses COSMIC's Pipe Flexibility Analysis Program (MEL-21) to analyze the stresses due to weight, temperature and pressure found in proposed piping systems. Individual flow rates are put into the computer, then the computer calculates the pressure drop existing across each component; if needed, design corrections or adjustments can be made and rechecked.

Burns & McDonnell uses the same MEL-21 program to analyze structural steel stresses in designing aircraft hangars, such as the Boeing 747 hangar shown under construction at left.